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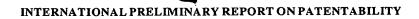
INTERNATIONAL PRELIMINARY REPORTON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)



(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTI	ON	See Form PCT/IPEA/416			
	T		In the second second	,,		
International application No. PCT/JP 03 / 10196	International filing date (d		Priority date (day/month/			
11.08			09.08.	2002		
International Patent Classification (IPC)	or national classification an	id IPC				
Int.Cl / 120D1/033	•	•				
Applicant						
SHOWA DENKO	С.К.					
1. This report is the international	preliminary examination r	eport, established b	y this International Prelimi	nary Examining		
Authority under Article 35 and t	ransmitted to the applicant	according to Article	e 36.			
2. This REPORT consists of a total		<u> </u>	sheet.			
3. This report is also accompanied		; :				
a. a total of	_ sheets, as follows:		•			
sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).						
sheets which s	unersede earlier sheets, but	which this Authori	ty considers contain an amer	ndment that goes		
beyond the dis	closure in the international		as indicated in item 4 of Bo			
Supplemental	Box.					
b. a total of (indicate type and number of electronic carrier(s)) containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).						
4. This report contains indications	relating to the following ite	ms:	•			
Box No. I Basis of the						
Box No. II Priority	-					
Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability						
Box No. IV Lack of unity of invention						
Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement						
Box No. VI Certain documents cited						
Box No. VII Certain defects in the international application						
Box No. VIII Certain observations on the international application						
Date of submission of the demand	Date of completion	on of this report				
01.03.20	05.11.2004					
Name and mailing address of the IPEA/JP		Authorized office		3M 3332		
Japan Patent Office		NAGASAKI Yoichi		JH 3332		
3-4-3. Kasumigaseki, Chiyoda-ku, Tokyo 100-8915. Japan		Telephone No. +81-3-3581-1101 Ext. 3376				



Intermonal application No.

PCT/JP03 /10196

	regard to the language, this report is based on the	international application in the languag	e in which it was filed, unless					
otner	therwise indicated under this item.							
LJ.	This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:							
	international search (under Rules 12.3 and 23	3.1(b))						
	publication of the international application (u	under Rule 12.4)						
	international preliminary examination (under	Rules 55.2 and/or 55.3)						
			i					
	regard to the elements of the international application to the receiving Office in response to an invitation	-	3					
and a	re not annexed to this report):							
	the international application as originally filed/furnished							
	the description:							
ш			as originally filed/furnished					
	pages							
	pages*							
	pages*	received by this Authority on						
	the claims:							
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	pages		as originally filed/furnished					
	pages*							
		_ received by this Authority on						
	pages*	received by this Authority on	<u> </u>					
Ш	the drawings:							
•	pages		as originally filed/furnished					
	pages*	received by this Authority on						
	pages*	received by this Authority on	<u> </u>					
	a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.							
3. 🔲	The amendments have resulted in the cancellation	on of:						
	the description, pages							
•	the eleima Nee		- '					
	the claims, Nos.							
	the drawings, sheets/figs							
	the sequence listing (specify):		·					
	any table(s) related to sequence listing (spec	eify):	·					
4.	This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)). The description, pages							
	the claims, Nos.							
	the drawings, sheets/figs							
	the sequence listing (specify):							
	any table(s) related to sequence listing (spec		,					
4 70.								
* If item 4 applies, some or all of those sheets may be marked "superseded."								



Intermonal application No.
PCT/JP03 / 10196

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement					step or industrial applicability;
1. 5	Statement				
	Novelty	(N)	Claims Claims	1-18	YES NO
	Inventiv	re step (IS)	Claims Claims	1-18	YES NO
	Industri	al applicability (IA)	Claims Claims	1-18	YES NO
2. (Citations a	nd explanations (Rule 7	0.7)		·

The following documents have been considered for the purpose of this report: D1=EP 845646 A1(SHOWA ALUMINUM CORPORATION)1998.06.03

D2=US 5799727 A1(FORD MOTOR COMPANY)1998.09.01

The subject matter of claim 1-18 does not appear to involve an inventive step in view of the documents D1 and D2 cited in the ISR.

D1 discloses a flat tube of a heat exchanger and process for producing the flat tube. The flat tube comprises a aluminum sheet folded at the middle of its width like hairpin or two upper and lower aluminum sheets, and a reinforcing wall comprising upward ridge and downward ridge formed in a hollow portion of the flat tube.

D2 discloses the heat exchanger tube comprising walls to form a plurality of fluid flow path, and one side of the walls include stepped portions to form windows of a non-discrete flow path.

The skilled person in the art would easily conceive the idea of applying stepped portions with one side of the walls in D2 to the invention in D1. . .